Niels Keller

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Education

University of Vermont (UVM) | Burlington, VT

Bachelor of Science | Electrical Engineering Expected Graduation: May 2026

- Year 4, Cumulative GPA: 4.0, Minor: Computer Science, Certificate: Autonomy and Robotics
- Relevant Coursework: Microcontrollers, Signals and Systems, Digital Signals Processing, Control Systems, Autonomy 1 (Graduate Level), Advanced Programming, Machine Shop
- Selected Honors: UVM Electrical Engineering Junior Award, UVM Dean's List (all terms), UVM Vermont Scholars Award Scholarship

Skills

- Programming: Python, C++, MATLAB, Git, NumPy, SciPy, Java, Linux
- Embedded & Electrical Systems: Microcontrollers, Control Systems, Digital Signals Processing
- Prototyping Skills: Altium Designer, KiCad, Electronics Prototyping, LTspice, CAD, FDM 3D Printing
- Fluent in German and English (both written and spoken)
- Other Skills: Problem Solving, Team Leadership and Collaboration, Project Management, Technical Documentation

Work Experience

Teaching Assistant | UVM | Burlington, VT Aug 2025 - Present

- Co-leading a weekly lab section with 21 students
- Helping students implement microcontroller systems in C++ for their projects
- Debugging and troubleshooting a broad variety of hardware and software problems
- Mentoring and advising students

Automation and Robotics Intern | GlobalFoundries | Burlington, VT Jun 2025 - Aug 2025

- Designed, built, and tested a 3 degree of freedom robotic system controller for wafer fab automation
- Utilized onboard sensors and velocity control to ensure wafer transport safety
- Developed, tested, and deployed a driver library in C++ to interface with lower level stepper motor controllers
- Developed systems to electrically test automation components including industrial light gates, proximity detectors, and stepper controllers

Automation and Robotics Intern | GlobalFoundries | Burlington, VT Jun 2024 - Aug 2024

- Utilized KiCad to design, and tested replacement circuit boards for a wafer transport robot to reduce cost and supply scarce parts
- Designed and oversaw live wafer transport robot tests in a high-stakes wafer fabrication environment
- Designed and built a mechanical/electrical test environment for automated wafer handling equipment
- Performed data-driven analysis of wheel performance to optimize robotic system reliability

Electrical Engineering Intern | Cannon Instrument Co. | State College, PA May 2023 - July 2023

- Collaborated on developing automated testing equipment for use in production of scientific instruments
- Designed, built, tested, and incremented a PCB main board with over 200 components
- Developed embedded system firmware in C on an ESP32
- Collaborated with mechanical engineers for system integration of PCB main board

Project/Club Experience

Autonomous Weeding Robot | Senior Year Capstone Project Sep 2025 - Present

- Implementing Go-To-Goal control system and path planning on a NVIDIA Jetson in Python
- Collaborate with a team of mechanical and electrical engineers and local farmers
- Interacting with project clients and stakeholders
- Implementing machine vision systems for goal recognition

Relay Clock | Project Team Lead | UVM IEEE Sep 2024 - Present

- Teach PCB Design, source control electronics fundamentals to five students
- Active mentor in club at large

Extracurricular Activities

- Photography (Gallery: nkeller.me/gallery/)
- Student pilot (Single Engine Land, soloed)
- Building and flying remote controlled model aircraft